

**Department of Environmental Health  
College of Public Health  
University of Georgia**

**EHSC/EPID 8250 (3 credit hours)  
Biomarkers: Public Health, Clinical, and Environmental Toxicology  
Spring, 2009**

**Course Information**

Instructors: Jeffrey Fisher, Bob Galen, Claire Robb, John Vena, Luke Naeher, Travis Glenn  
Office Location: Room 152, Environ. Health Sci. Bldg.  
Phone: 706-542-1001  
Email: jwfisher@uga.edu  
Office Hours: 1 hour before each class

**Course Meeting Time and Location**

Building: Environmental Health Science Building  
Room: Rowe Room (near dept office)  
Day: Monday (9:05 to 9:55) and Wednesday (9:05 to 10:55)

**Textbooks and Other Required Course Material**

*No text books, documents locations on the web.* **UGA WebCT:** <http://webct.uga.edu> Login with your UGA MyID and password.

**Course Description**

The **goal** of this class is to prepare students to understand the fundamentals of biomarkers and their intended application in public and clinical health and in occupational and environmental health. Students will learn how biomarkers are measured, how they are interpreted, their strengths and weaknesses. Student participation in the class is substantial. **Expected outcome:** Technical: The student will be capable of critically reviewing a biomarker paper from the primary literature and draw conclusions about its intended application. Public Health: The student will be able to interpret and communicate the use of biomarkers from a public health perspective. **Pre- or Co-requisite:** EPID 7010 or equivalent AND EHSC 7060 or EHSDC 6940 or equivalent. Dr. Fisher will provide permission.

**Course Learning Objectives**

*Learning objectives:* Learn how biomarkers can be used to ascertain the health status of humans and organisms that live in the environment.

### Course Requirements for Grading Purposes

One written exam will be given covering the fundamental concepts in biomarkers (40%). Twenty percent of the grade will be for an oral presentation that critically reviews a paper(s) from the primary literature. The final exam (40%) will be a team project that will involve a mock workshop/public meeting for the technical evaluation of a biomarker for use in public health.

### Topical Outline

Date	Topic	Primary Instructor	Activity
1/12	Class expectations, Intro to Biomarkers	Fisher	
1/14	Occupational Biomarkers	Fisher	
1/19	NO CLASS		
1/21	Community Health Biomarkers	Fisher	
1/26	Community Health Biomarkers	Fisher	
1/28	Biomarkers of Exposure	Naeher	
2/2	Susceptible populations	Fisher	
2/4	Molecular Environmental Biomarkers	Travis	
2/9	Environmental EPI and Biomarkers	Vena	
2/11	TBD		
2/16	Clinical biomarkers	Galen, Robb	
2/18	<b>REVIEW</b>	Fisher	
2/23	<b>TEST</b>	Fisher	
2/25	Quantitative Methods for Biomarkers		
3/2	Quantitative Methods for Biomarkers		
3/4	Biomarkers and Health Risks		
3/9	SPRING BREAK		
3/11	SPRING BREAK		
3/16	Case Study-Research	Vena	Fisher at SOT
3/18	Case Study-Research	Naeher	Fisher at SOT
3/23	paper review	Student	
3/25	paper review	Student	
3/30	Enzymes and Polymorphisms		
4/1	Reproductive State and Life Stage		
4/6	Reproductive State and Life Stage		
4/8	PROJECT	Students,Fisher	
4/13	PROJECT	Students	
4/15	PROJECT	Students	
4/20	Dry Run	Students,Fisher	
4/22	Refinement in PROJECT	Students,Fisher	
4/27	PROJECT	Students	

4/29	PROJECT PRESENTATION	External Panel	

\*Schedule is subject to change. Students will be notified of changes as far in advance as possible

### **Grading Policy**

A= 90% and above, B=80% and above, C=70% and above. Plus grading will be used.

### **Make-Up Policy**

*Instructor must be notified in advance if missing graded work. Emergency situations will be dealt with on a case by case basis.*

### **Attendance Policy**

Attendance is expected for all class periods. Participation in the class is expected.

### **University Honor Code and Academic Honesty Policy**

*All academic work must meet the standards contained in "A Culture of Honesty." All students are responsible to inform themselves about those standards before performing any academic work.*

### **Students with Disabilities**

Students with disabilities who require reasonable accommodations in order to participate in course activities or meet course requirements should contact the instructor or designate during regular office hours or by appointment.

### **General Disclaimers**

*The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.*